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EXAMINER

YAMNITZKY, MARIE ROSE

ART UNIT

PAPER NUMBER

1774

7

DATE MAILED: 01/10/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

ASZ

# Office Action Summary

Application No.

09/831,724

Applicant(s)

WOOD ET AL.

Examiner

Marie R. Yamnitzky

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 06 December 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

1. This Office action is in response to applicants' amendment filed 12/06/02 (Paper No. 6), which amends claims 1, 5, 7 and 9-11 and provides a substitute abstract.

Claims 1-11 are pending.

2. Claims 10 and 11 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The distinction between the "charge transporting compounds" which the organic layer additionally includes according to claims 10 and 11, and the "hole transporter" and "electron transporter" which the organic layer comprises according to claim 1, is not clear.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 4, 6 and 9-11 stand rejected under 35 U.S.C. 102(b) as being anticipated by JP 9-289081 for reasons of record in Paper No. 5.

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2-8 stand rejected under 35 U.S.C. 103(a) as being unpatentable over JP 9-289081 further in view of Zhang et al. (WO 97/32452) and Hung et al. (US 5,677,572) for reasons of record in Paper No. 5.

7. Claims 1-4, 6 and 9-11 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al. (US 5,281,489) in view of Boyer et al. (US 5,189,029) or Czerney et al. (*Applied Fluorescence Technology*, June 1989, pp. 13-14) or Czerney et al. (DD 265266 A1) for reasons of record in Paper No. 5.

8. Claims 5, 7 and 8 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al. (US 5,281,489) in view of Boyer et al. (US 5,189,029) or Czerney et al. (*Applied Fluorescence Technology*, June 1989, pp. 13-14) or Czerney et al. (DD 265266 A1), further in view of Zhang et al. (WO 97/32452) and Hung et al. (US 5,677,572) for reasons of record in Paper No. 5.

9. Applicants' arguments filed 12/06/02 have been fully considered but they are not persuasive.

Applicants argue that none of the applied prior art documents “include, in a single layer, the functions of hole transporting, electron transporting and light emission.” Applicants argue that none of the documents has the option of providing “single” layer devices incorporating the compounds of the present invention, such single layer devices having cost and manufacturing advantages.

The examiner respectfully disagrees with applicants’ arguments.

With respect to the rejections based on JP 9-289081 (alone and in view of additional references), pyromethene-BF<sub>2</sub> complexes meeting the limitations of a material of general formula I wherein A – D is the first possibility set forth in claim 1 have both electron transporting and light emitting properties. Accordingly, for a device having such a pyromethene-BF<sub>2</sub> complex in a hole transporting layer in combination with one or more organic hole transporting compounds as taught by JP 9-289081, the hole transporting layer meets the limitations of the single layer required by the present claims because the layer provides the three functions of hole transportation, electron transportation and light emission. The function of hole transportation is provided by the layer because of the incorporation of one or more organic hole transporting compounds in the layer. The functions of electron transportation and light emission are provided by the same layer because of the incorporation of a pyromethene-BF<sub>2</sub> complex in the layer.

With respect to the rejections based on Mori et al. (US 5,281,489) in view of additional references, Mori et al. clearly require that a single layer provide the three functions of hole transportation, electron transportation and light emission. The luminescent layer of Mori’s

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devices must comprise “a mixture of at least one fluorescent luminescent agent, at least one hole moving and donating agent capable of moving the holes injected from the anode and donating the holes to the luminescent agent, and at least one electron moving and donating agent capable of moving the electrons injected from the cathode and donating the electrons to the luminescent agent” (e.g. see column 3, lines 29-36; also see claim 1).

10. Miscellaneous:

In rewriting claim 1 as an amended claim, the curved line connecting A and D as shown in Formula I and in the first line after Formula I in original claim 1 has been removed.

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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12. Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (703) 308-4413. The examiner works a flexible schedule but can generally be reached at this number from 6:30 a.m. to 4:00 p.m. Monday, Tuesday, Thursday and Friday, and every other Wednesday from 6:30 a.m. to 3:00 p.m.

The current fax numbers for Art Unit 1774 are (703) 872-9311 for official after final faxes and (703) 872-9310 or (703) 305-5408 for all other official faxes. (Unofficial faxes to be sent directly to examiner Yamnitzky can be sent to (703) 872-9041.)

MRY  
01/09/03



MARIE YAMNITZKY  
PRIMARY EXAMINER

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